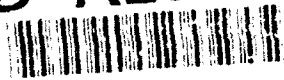


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# A First Start Toward Nuclear Disarmament-- CIS Openness and Compliance

Lieutenant Colonel

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U. S. Air Force

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## **ABSTRACT**

Presents a brief review of Strategic Nuclear Arms Treaties that led to the Treaty Between the United States of America and The Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms (START). Describes the over ten years of negotiations that finally led to START with initiatives and substitute initiatives offered by each side. The START Treaty is examined with respect to the Treaty Limited Items being defined and the methods of verification to ensure compliance. A section is devoted to the "Soviet's" noncompliance to previous treaties, thus reinforcing the importance of inspection, monitoring, and application of compliance protocols. Additionally, the unilateral arms reductions initiated by President Bush and the subsequent responses by President Gorbachev and his successor, President Yeltsin, are described. The study also describes some methods of verification which include techniques from the most intrusive to remote. The conclusion asserts that: START is verifiable and serves as a model for treaties which follow; verification remains the key to Treaty success; and, both the US and CIS benefit from START. In short, security will be significantly better served in a world with a START Treaty than in one without it.

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## CHAPTER I

### INTRODUCTION

In early August 1945, a single United States B-29 bomber winged its way toward the island of Japan. Technicians onboard the aircraft, "Enola Gay," worked nervously on a device in the aircraft's bomb bay that would change the specter of war for all time. The bomber droned on toward its target--Hiroshima. At the precise time the device was released, the bomber made a radical turn, and departed the target area. Three days latter a similar B-29 mission was flown by "Bock's Car," this time the target--Nagasaki. The results were the same. Man's best had done man's worst, and the nuclear age was upon us.

The realization of the destructive power of nuclear weapons was indelibly etched for all time in history. The United States became the first nation to explode a device and have a nuclear capability. But this single place in history and stature was short-lived. The Soviet Union exploded a nuclear device in 1949 and served notice to the world that she, like the United States, was a nuclear power--and a power to be reckoned with.

From that moment on, the world witnessed an escalation in nuclear testing, weapons development and delivery systems, doctrines, strategies, acronyms, and fears. For over four decades the United States counted on nuclear deterrence to cope with the Soviet's own nuclear threat. Simply stated, the United States' strategy of deterrence was based on a premise that a Soviet nuclear attack on the United States would bring forth a nuclear rain of devastation and destruction on the Soviet Union in retaliation.



The strategy proved effective. There has not been a nuclear weapon detonated by belligerents since those two historical days in 1945.

The leaders of the United States and the Soviet Union remained rational and chose to live in an uneasy, but "peaceful" coexistence. This is not to say the US and USSR have not been diametrically opposed in many political, geopolitical or social matters--they have. The two countries have been on the brink of confrontation numerous times: Berlin 1948-49; Korea 1951-53; Hungary 1956; Berlin 1961; Cuba 1962; and Vietnam 1960's-1970's; among others. Although nuclear deterrence has worked, as long as both countries have such extraordinary nuclear arsenals the potential exists for a catastrophic event, whether by design or accident.

The realization of nuclear war is not a new or emerging phenomenon. Initiatives dating back to the 1940s have attempted to reduce nuclear proliferation, a nuclear war, or a mistaken launch. These initiatives span decades, but none has had the impact of the Strategic Arms Reduction Treaty (START).

By way of background, a brief review of Strategic Nuclear Arms Treaties that led to START will be given, followed by a more detailed look at the actual START negotiations and Treaty. An examination of the Treaty itself with particular attention to the verification protocols will be presented along with Soviet noncompliance with past treaties; which will lay the groundwork for reasonable expectations of similar Soviet non-compliance to START.

Next we'll look at verification and compliance to START with a view at the current upheavals and disintegration of the USSR.

Finally, we'll attempt to draw some conclusions that answer the questions: Is START valid? Is it verifiable? How do we deal with the new structure that was formerly the Soviet Union?

In the last six months we have seen significant changes in the Soviet Union which have radically altered the way we have conducted business. Now, it is no longer the Soviet Union, but the Commonwealth of Independent States (CIS). We are now making wholesale unilateral cuts in our defense structure as the CIS is viewed as "our friend" and no longer "the Evil Empire." We are supplying the CIS with food, loan credits, and even offering assistance to help them destroy nuclear weapons. Even though the world has changed, the CIS remains the only country on the face of the earth capable of destroying the United States in a nuclear holocaust.

## CHAPTER II

### A CHRONOLOGY: STRATEGIC NUCLEAR ARMS TREATIES 1963 - 1991

The United States has been a major partner in all the international treaties involving strategic nuclear arms. The following chronology provides a brief account of the treaty issues and the role of other parties in the treaties leading up to START.

#### Limited Test Ban Treaty (LTBT) - 1963

In June, President Kennedy proposed a US moratorium on atmospheric nuclear tests and negotiations began with the Soviet Union and Great Britain in a Limited Test Ban Treaty. Six weeks of negotiations were required to complete the treaty, which was signed by leaders in Moscow, Washington, and London. Ratification followed quickly. In October, the treaty entered into force, banning nuclear testing in the atmosphere, underwater, and in outer space. As of 1991, 90 nations have ratified this treaty.<sup>1</sup>

#### Nuclear Nonproliferation Treaty (NET) - 1968

In 1961, the United Nations General Assembly approved a resolution calling on all states, particularly the nuclear powers, to negotiate and sign agreements refraining from the transfer of nuclear weapons. In August 1965, the US submitted a draft nonproliferation treaty obligating the nuclear powers not to transfer nuclear weapons to the national control of any nation not already possessing them. Following years of long negotiations, the NET was signed in July 1968 in Washington, London, and Moscow. Other United Nation's states were invited to sign the treaty, with all

signatories committed to pursuing further negotiations towards a Comprehensive Test Ban on nuclear weapons testing. As of 1991, 130 nations have ratified NET, making it the most widely adhered to arms control agreement in modern history.<sup>2</sup>

#### **Strategic Arms Limitation Treaty (SALT I) - 1972 and 1974**

President Johnson announced on 1 July 1968, that the US and USSR would begin discussions on limiting and reducing both strategic offensive and defensive weapon systems. Formal SALT I negotiations began in Vienna in April 1970. Two years later, President Nixon and Communist Party General Secretary Brezhnev signed two accords, completing the SALT I Treaties. These accords froze the number of land-based intercontinental ballistic missiles (ICBMs) at existing levels and permitted construction of submarine launched ballistic missiles (SLBMs) up to an agreed upon limit. A separate accord, the Anti-Ballistic Missile Treaty (ABM Treaty), limited the number of anti-ballistic missile defensive sites to two in each nation. Later, in 1974 at another Moscow summit, President Nixon and Party General Secretary Brezhnev signed an ABM Treaty protocol, restricting each nation to one ABM site.<sup>3</sup>

#### **Threshold Test Ban Treaty (TTBT) - 1974 and 1990**

In April 1974, President Nixon and General Secretary Brezhnev agreed to conduct negotiations on limiting underground nuclear weapons tests. A team of US experts went to Moscow for technical talks. At the Moscow Summit of July 1974, the US and Soviet Union signed the TTBT. The agreement included provisions for exchanging technical data, site designations, and limitations on yields of

nuclear tests to less than 150 kilotons. For 16 years, 1974 to 1990, this treaty was signed, but never ratified by the legislatures of either nation. Then, in June 1990, President Bush and President Gorbachev signed new verification protocols for the treaty. The US Senate and Supreme Soviet subsequently ratified the treaty and protocols in October/November 1990. On 11 December 1990, the TTBT and its protocols entered into force.<sup>4</sup>

#### **Peaceful Nuclear Explosions Treaty (PNET) - 1976 and 1990**

In October 1974, negotiations began in Moscow on a bilateral treaty between the US and Soviet Union on defining and limiting peaceful nuclear explosions. In May 1976, President Ford and General Secretary Brezhnev signed the PNET establishing limits of 150 kilotons for any single explosion. Like the TTBT, this treaty remained signed, but unratified for 16 years. Then, in June 1990, President Bush and President Gorbachev signed new verification protocols for TTBT & PNET. The US Senate and Supreme Soviet ratified the treaty and protocols in October/November 1990. On 11 December 1990, the PNET and its protocols became operative and entered into force.<sup>5</sup>

#### **Strategic Arms Limitation Treaty II (SALT II) - 1979**

A second round of US - Soviet Union SALT negotiations began almost immediately after the signing of the 1974 ABM Treaty. In November 1974, President Ford and General Secretary Brezhnev met at Vladivostok, USSR, and signed an agreement limiting each nation's strategic nuclear delivery vehicles (SNDV) to 2,400. Negotiations leading to a SALT II agreement opened in Geneva, but

significant differences quickly emerged. For the next five years, the negotiators discussed, without agreement, cruise missiles, multiple independently-targetable reentry vehicles (MIRVs), telemetry, and a range of verification issues. Then in June 1979, President Carter and General Secretary Brezhnev met in Vienna and signed the SALT II Treaty. President Carter submitted the treaty to the US Senate for its "advice and consent." Prompted by the Soviet Union's invasion of Afghanistan in late December 1979, President Carter asked the Senate to delay ratification. Subsequently, both nations pledged to adhere to the negotiated SALT II document, however, the US never ratified it. In May 1986, President Reagan withdrew the US from its unilateral SALT II pledge.<sup>6</sup>

#### The Road to START - 1981 to 1991

In 1981, President Reagan, following an in-depth review of arms control and compliance policies balanced against overall US security, decided on a US position on strategic forces which would reduce their number rather than merely place limitations on their growth.<sup>7</sup>

During a speech on 9 May 1982, at Eureka College in Illinois, the President outlined his proposal, which placed emphasis on the most destabilizing weapons systems, ICBMs. The President's basic objective was a verifiable agreement that enhanced stability, reduced the risks of war, and achieved large reductions in the strategic nuclear weapons of both sides.<sup>8</sup>

On 31 May 1982, President Reagan announced the START talks would begin with the Soviets in Geneva, and the US would refrain

from any action undercutting existing strategic arms agreements as long as the Soviet Union abides with similar restraint.<sup>9</sup>

The "talks" began on 29 June 1982 as planned, and shortly thereafter, the US presented a proposal for strategic reduction in two phases. The proposal included:

- Reductions in the number of deployed strategic ballistic missile warheads to 5,000 for each side with a sublimit of 2,500 warheads on ICBMs which are landbased.
- A limit of 850 deployed strategic missiles with a sublimit of no more than 210 heavy and medium ICBMs of which no more than 110 could be heavy ICBMs.
- A ban on new heavy missiles.
- Substantial reduction in ballistic missiles destructive capability and potential (throw-weight).
- An equal ceiling on heavy bombers below the US level in the SALT II.
- Equitable limits and constraints on other strategic systems.<sup>10</sup>

During the meeting on 29 March 1983, the Soviets charged that the US proposal discriminated against them and forced them to restructure their strategic forces. The Soviets tabled a draft START treaty which would have resulted in a 25 percent reduction in SNDVs (bombers and ballistic missiles). Their proposal prohibited all ground- and sea-launched cruise missiles (SLCMs) and limited air-launched cruise missiles (ALCMs) with a range over 600 kilometers (360 miles). The Soviet proposal identified reductions of the most destabilizing systems--fast, accurate ballistic missiles with multiple warheads, which would, in fact, permit

substantial growth in the number of ballistic missile warheads above the current levels.<sup>11</sup>

On 6 April 1983, the Scowcroft Commission (The Commission on Strategic Forces), appointed by President Reagan, published its report which underscored the need to modernize US strategic weapons, and undertake negotiations leading to balanced arms control agreements that would promote stability in times of crisis and result in meaningful, verifiable reductions. President Reagan endorsed this report.<sup>12</sup>

The US presented its first draft START treaty on 7 July 1983. The draft reflected the central elements of the US START proposals, while also taking into consideration several Soviet concerns about the original US proposal. The US eased its proposed limit of 850 deployed ballistic missiles and its insistence that no more than half of the warheads on ballistic missiles be land-based. In addition, the proposal included a limit of 400 heavy bombers. This proposal would have given both sides the option of more flexibility in restructuring their forces, including moving towards smaller and less threatening single-warhead ICBMs.<sup>13</sup> In October 1983, President Reagan added to this US START position the principle of mutual, guaranteed build-down of strategic weapons, whereby a ratio of older weapons would be reduced as certain newer ones were deployed. Variable ratios were designed to channel modernization of strategic forces toward more stabilizing systems.<sup>14</sup>

In December 1983, START hit a snag when the Soviets suspended the talks. The Soviets claimed a "change in the strategic situation" after NATO deployed intermediate-range missiles subsequent



to the Soviet's deployment of SS-20 missiles. The US saw the SS-20 missiles as a threat to Western security; however, they did not view the mutual deployment of missiles being a "show stopper." The US indicated a willingness to return to the talks whenever the Soviets were ready.<sup>15</sup>

The talks had remained dormant for almost a year, when in September 1984, in a speech to the United Nations General Assembly, President Reagan proposed a broad "umbrella" framework for talks between the US and Soviet Union on arms control issues. The President made it clear that both the US and Soviet nuclear arsenals were far beyond what was necessary for defense, and that he was committed to reducing these arsenals by substantial numbers.<sup>16</sup> This speech seemed to serve as the impetus to get the "talks" back on track. In November, the Soviets agreed to Nuclear and Space Talks (NST) with the US and began negotiations on these issues.<sup>17</sup>

In January 1985, Soviet Foreign Minister Andrei Gromyko met with US Secretary of State George Shultz in Geneva to set an agenda for new comprehensive arms control negotiations to include strategic nuclear arms, intermediate-range nuclear forces, and defense and space.<sup>18</sup> Similarly, President Reagan in his second Inaugural Address said, "We are not just discussing limits on a further increase of nuclear weapons. We seek, instead to reduce their number."<sup>19</sup>

The US and Soviets began discussions on NST in March 1985, with the US objective being to radically reduce the number and destructive power of offensive strategic weapons. The US draft START treaty of 1983 remained on the table, but the Soviets made

no specific proposals. Instead, the Soviets slowed the talks by insisting on unacceptable limits on the US Strategic Defense Initiative (SDI) as a precondition for continuation of talks on strategic arms.<sup>20</sup>

During meetings in September 1985, the Soviets surfaced another START proposal containing a number of unacceptable features, such as counting certain US systems as "strategic," while excluding an even greater number of comparable Soviet systems. A significant breakthrough was gained however, as the Soviets accepted for the first time the long advocated US principle of deep reductions in strategic offensive forces.<sup>21</sup>

The US tabled a new START proposal during negotiations with the Soviets in November 1985 which included:

- A limit of 4,500 re-entry vehicles (RVs) on ICBMs and SLBMs about 50 percent below current levels.
- A sublimit of 3,000 RVs carried by ICBMs--about 50 percent below the current Soviet level.
- A sublimit of 1,500 RVs carried on permitted ICBMs except those on silo-based light and medium ICBMs with six or fewer warheads.
- A 50 percent reduction in the highest overall strategic ballistic missile throw-weight of either side--that is, from the Soviet level of over 12 million pounds. (The US had fewer than 4.4 million pounds.)
- Contingent upon Soviet acceptance of these RV and throw-weight limits, the US would accept an equal limit of 1,500 on the number of long-range ALCMs carried by US and Soviet heavy bombers about 50 percent below planned US deployment levels.

- A limit of 1,250 - 1,450 on strategic ballistic missiles (ICBMs and SLBMs)--about 40 to 50 percent below the current higher Soviet level.
- In the context of an appropriate agreement on strategic ballistic missiles, the US could accept a limit of 350 on heavy bombers--roughly a 40 percent reduction for US SALT--accountable levels.
- A ban on all new heavy strategic ballistic missiles and the modernization of existing heavy missiles--the most destabilizing weapons.
- A ban on all mobile ICBMs because of difficulties in verification.<sup>22</sup>

Following two days of intense negotiations during the Geneva Summit in the latter part of November 1985, President Reagan and General Secretary Gorbachev issued a joint statement. Among other things, they agreed to commit their countries to early progress at the Geneva NST talks, and to focus in particular on areas where there was common ground, including the "principle of 50 percent reductions in the nuclear arms of the US and USSR appropriately applied."<sup>23</sup>

During 1986, significant steps occurred to reduce the number of nuclear weapons. In January, General Secretary Gorbachev proposed the elimination of nuclear weapons over a 15 year period. His plan restated previous Soviet proposals including:

- The elimination of nuclear weapons contingent upon US acceptance of measures which would cripple the US SDI program.

- A 50 percent reduction in each side's nuclear arms capable of reaching the other's territory, which would include many US intermediate-range systems while excluding comparable Soviet systems.<sup>24</sup>

President Reagan's February response to General Secretary Gorbachev's January proposal acknowledged the need for eliminating nuclear weapons by the end of the century, and refocused the issue in his following comment:

*"I am pleased that the Soviet Union appears to agree in principle with our ultimate goal of moving the total elimination of nuclear weapons when this becomes possible....As the means of accomplishing this, we support a process by which the US and the Soviet Union would take the first steps by implementing the principle of 50 percent reductions in the nuclear offensive forces of both sides, appropriately applied....We believe that the immediate focus should remain on the prompt accomplishment of these first necessary steps."*<sup>25</sup>

The remainder of the year saw proposal and counterproposal being tabled by the US and USSR. In June the Soviets new "interim" proposal called for less than the 50 percent reductions agreed to at the 1985 summit. President Reagan agreed their proposal had merit, however, the US could not accept it without changes. The US in-turn presented substantial revisions of its proposal to accommodate the Soviet idea of taking interim steps to 50 percent reductions, the preferred US position.<sup>26</sup> In addition, President Reagan addressed the UN General Assembly saying the US was seeking a "50 percent reduction of American and Soviet arsenals--with the

central focus on the reduction of ballistic missile warheads..."<sup>27</sup>

In an attempt to narrow the differences between the US and Soviet arms control positions and to lay the groundwork for more productive negotiations, President Reagan met with General Secretary Gorbachev at Reykjavik, Iceland--the Reykjavik Summit. President Reagan refused to limit SDI research and testing to the laboratory as demanded by General Secretary Gorbachev, and the discussions stalled. In spite of this, both agreed to reduce SNDVs to 1,600 on each side, with no more than 6,000 warheads on these delivery vehicles. The Soviets recognized the need for significant cuts in heavy ICBMs, and there was agreement on counting rules for bomber weapons. Gorbachev, however, demanded that the US accept all his proposals as a package, including the crippling aspects to SDI. President Reagan rejected these demands as being out of hand.<sup>28</sup>

During the remainder of the year however, the US and Soviets submitted new START proposals, including some major US initiatives:

- A 50 percent phased reduction to equal levels in strategic offensive arms.
- A ceiling of 1,600 on SNDVs, to include ICBMs, SLBMs, and bombers.
- A ceiling of 6,000 warheads, to include ICBMs and SLBMs, and long range ALCMs. Each heavy bomber carrying gravity bombs and short range attack missiles (SRAMs) would count as a warhead in the 6,000 limit, and each bomber carried ALCM would count as one warhead in the 6000 ceiling. Sublimits of

4,800 ballistic missile warheads, 3,300 ICBM warheads, and 1,650 warheads on permitted ICBMs except those on silo-based light and medium ICBMs with six or fewer warheads.

- A 50 percent reduction from the current Soviet throw-weight level, to be codified by direct or indirect limits.
- A ban on mobile ICBMs.
- Commitment to find a mutually acceptable solution to limiting long-range nuclear-armed SLCM outside the 1,600 to 6,000 limits.
- Verification of compliance to include an exchange of comprehensive and accurate data both before and after the reductions take place, on-site observation of weapon reduction, and effective monitoring of remaining inventories associated facilities, including on-site inspection.
- Negotiations on verification details should take place in parallel with negotiations on reduction of weapons.<sup>29</sup>

The inclusion of the verification and compliance issues through effective monitoring measures was a first time initiative in the START proposal and served as a springboard for further monitoring, verification, and compliance developments.

The Soviet proposals however, only partially reflected the headway at Reykjavik, and on some issues proved to be a step backward. The Soviets continued to insist that progress in all three of the NST negotiating forums be tied to US acceptance of the unacceptable Soviet position on strategic defenses.<sup>30</sup>

During 1987, the US and Soviet Union made significant progress on START. The US presented its first draft START treaty in Geneva in May. The draft reflected the areas of agreement reached

in Reykjavik. In addition to reducing strategic nuclear arms by 50 percent, ceilings of 1,600 SNDVs and 6,000 warheads on these delivery vehicles were included, as well as the Reykjavik agreement on bombers and their weapons counting. President Reagan commented that the US START proposal "provides a solid basis for the creation of a fair and durable agreement."<sup>31</sup>

The Soviet draft START treaty contained many of the same limitations as the US draft; however, the Soviet draft differed in several significant ways. It:

- would limit launchers of ICBMs and SLBMs and not the missiles themselves as called for in the US proposal.
- did not include specific sublimits on warheads.
- would not record in any binding form a 50 percent in throw-weight reductions.
- would permit mobile ICBMs.
- would create a ceiling of 400 on long-range SLCMs and permit their deployment on submarines only.
- would require 50 percent reductions over five years rather than seven.

Moreover, under the Soviet proposal, the 50 percent reduction in strategic offensive arms was contingent upon achievement of a US-Soviet accord to limit the testing and deployment of space-based missile defense systems.<sup>32</sup>

The remainder of the year saw numerous high level meetings. These meetings culminated in December with the Washington Summit. During this Summit, President Reagan and General Secretary Gorbachev signed a treaty eliminating intermediate-range nuclear missiles (INF). They also agreed to work toward completion of a

START agreement in time for signature during their next meeting in Moscow in the first half of 1988. Both wanted their negotiators to build upon the areas of agreement on 50 percent reductions as reflected in the joint draft START treaty text developed in Geneva. These included:

- A ceiling of 1,600 SNDVs with 6,000 warheads and a ceiling of 1,540 warheads on 154 heavy missiles.
- The agreed counting rules for heavy bombers and their nuclear armament.
- An agreement that reduced the aggregate throw-weight of Soviet ICBMs and SLBMs to a level approximately 50 percent below existing level, and this level would not be exceeded by either side.<sup>33</sup>

During this summit, the two leaders made further progress on START, including agreement on a sublimit of 4,900 for the total number of ballistic missile warheads, a declaration of the number of warheads on existing ballistic missiles, and building on the verification provisions of the INF Treaty as guidelines for effective verification of a START treaty. However, important differences remained, including such issues as mobile ICBMs, additional warhead sublimits on ICBMs, SLCMs, and the details of an effective verification regime.<sup>34</sup>

The following year, 1988, the US and Soviets did extensive work on the verification process. In February, the US presented a draft Protocol on Inspection and Monitoring--a key element in the START treaty. This was followed by a meeting in Moscow by Secretary Shultz and Foreign Minister Shevardnadze wherein they reaffirmed the Washington Summit commitment to complete a START treat-



ty. They directed their negotiators to develop joint drafts of three key verification documents before the next ministerial, a meeting between the Secretary of State and Foreign Minister, in March. These documents were:

- a Protocol on Inspection,
- a Protocol on Conversion or Elimination (of strategic nuclear delivery systems [SNDS]),
- and, a Memorandum of Understanding (MOU) (data exchange).<sup>35</sup>

March 1988 was a busy month as the US and Soviets presented draft Protocols, MOUs, and Verification documents. At Geneva the US presented a draft MOU on data exchange, completing its submission of drafts on the three major verification proposals. The Soviets presented their draft Protocols on Inspection, Conversion or Elimination, and a draft MOU. These joint negotiations produced draft texts of the three verification documents with disputed points indicated in brackets. These actions culminated in late March with a meeting in Washington where Shultz and Shevardnadze reviewed the draft documents. They agreed that negotiators should seek to resolve the remaining differences and would report on progress at the next ministerial. Prior to ending this meeting, Secretary Schultz again stated the US position of wanting to conduct an early exchange of information and data to facilitate the effort to design an effective verification regime. This would help develop and tailor verification measures for each category of systems subject to START provisions.<sup>36</sup> The remainder of the year produced steady progress on concluding a START treaty, and the election on a new US President--George Bush.

After his inauguration in January 1989, President Bush appointed James Baker as Secretary of State. The new administration believed the work done on START by the previous administration was an excellent foundation upon which to build, but reserved the right to change and modify some US positions. In June 1989, President Bush announced a Verification and Stability Initiative, designed to build confidence, enhance stability and accelerate resolution of outstanding verification issues, and provide both sides practical verification experience, thereby facilitating efforts to conclude a START treaty. The US initiative included:

- Immediate establishment of on-site perimeter/portal monitoring of certain missile production facilities.
- Exchange of data on each side's strategic nuclear forces.
- Prohibition of encryption of telemetry on ICBMs and SLBMs.
- Familiarization with procedures for inspections to monitor the number of warheads on ballistic missiles.
- Addressing the problem of short-time-of-flight SLBMs.
- Notification of strategic exercises.
- Demonstration of techniques of identifying missiles by tagging (using unique non-removable and non-reproducible credit card size tags on mobile missiles).<sup>37</sup>

The US and Soviets continued to make significant advances in START when Baker and Shevardnadze met for two days in Wyoming--the Wyoming Ministerial. During this meeting the Soviets dropped their linkage between achieving a Defense and Space agreement and completing an agreement on START. They indicated, however, that they would walk away from START if the US did not adhere to the ABM Treaty as they interpreted it. The Soviets also agreed to

eliminate their illegal radar at Krasnoyarsk without preconditions--a long-standing US requirement for the signing of any strategic arms control treaty. In addition, Baker and Shevardnadze signed the "Agreement on Principles on Implementing Trial Verification and Stability Measures that would be carried out pending the Conclusion of the US-Soviet Treaty on the Reduction and Limitation of Strategic Offensive Arms." This document was a follow-up to President Bush's initiative in June. And finally, the Soviets agreed to US proposals on the following verification elements for mobile ICBMs:

- Upon return to garrison following a dispersal, rail-mobile ICBMs would be subject to enhanced National Technical Means (NTM) measures whose nature, scope and procedures are to be agreed upon by the two sides.
- No more than 10 road-mobile launchers of ICBMs may be based or located in a restricted area.
- NTM enhancement measures would involve either moving road-mobile launchers halfway out of their structures, or displaying such launchers next to their structures with the roofs of the structures open at the option of the inspecting side.

The Soviets also agreed in principle that rail-mobile garrisons would be limited in size.<sup>38</sup>

In November and December 1989, the US and Soviets successfully implemented one of the important verification and stability proposals announced by President Bush in June by conducting reciprocal demonstrations of techniques of identifying, or "tagging," ballistic missiles.<sup>39</sup>

On 22 January 1990, the opening day of Round XIII of the START negotiations, the US and Soviets signed an agreement providing for reciprocal demonstrations of each side's proposed procedures for verifying that the number RVs on a ballistic missile did not exceed the number assigned to it in a START treaty. This agreement was one of the verification and stability measure first proposed by President Bush in June 1989 to accelerate work on verification and completion of a START treaty.<sup>40</sup>

The remainder of 1990 saw continued progress towards a START treaty, primarily in the verification area. Issues on the range of ALCMs and SLCM were resolved, as well as identifying the various series of silo-based variants of mobile ICBMs (the US Peacekeeper and the Soviet SS-24 Mod 2) treated as mobile ICBMs. Also resolved was the number of non-deployed mobile ICBMs allowed. In December, Baker and Shevardnadze further agreed on:

- Perimeter-Portal Continuous Monitoring (PPCM) to be established at missile final assembly facilities for the Soviet SS-24 and SS-25 ICBMs and at first stage assembly facilities for the US Peacekeeper ICBM (which are transported in stages).
- Facilities capable of covert assembly of mobile ICBMs being subject to mandatory suspect-site inspection.
- Solid rocket motors for first stages of mobile ICBMs being subject to strict location restrictions.
- Heavy bombers of a type never tested with long-range nuclear ALCMs would not be subject to inspection. For other heavy bombers, provisions were made to distinguish between

those equipped to carry long-range nuclear ALCMs from those not so equipped.

- Rules were set to determine the warhead attribution for future types of ballistic missiles.

- The sides also agreed that the START ceiling on aggregate throw-weight would be 54 percent of current Soviet levels.<sup>41</sup>

During a meeting with President Bush and Foreign Minister Shevardnadze in December 1990, the President indicated he was pleased with the progress and was hopeful that a START treaty would be ready to sign at a Moscow Summit in February 1991. It was during this time that Shevardnadze resigned and Gorbachev appointed Aleksandr Bessmertnykh as Foreign Minister. During a Baker and Bessmertnykh meeting in January 1991, they jointly announced the Moscow Summit would be rescheduled. Additional issues continued to surface in that the Conventional Armed Forces in Europe Treaty (CFE) had some unresolved problems, the counting of certain Soviet armored units, placed START on hold. Baker and Bessmertnykh continued to meet throughout the Spring of 1991 and resolved the differences between the US and Soviets on CFE, however, START still had its problems but they were being worked. By early July, START had but one remaining issue and that concerned the method of calculating increases in missile throw-weight when used to determine whether a missile is a new type. Secretary Baker characterized the negotiations as "very, very difficult." It took President Bush and General Secretary Gorbachev to settle the final major issue--new missile type throw-weight. This dealt with new type ICBMs and SLBMs and their greatest throw-weight. If a dispute over throw-weight of a new type, or the increase in

throw-weight of an existing type occurred, the accountable throw-weight would be the value specified by the party owning the system in the notification protocol. To settle the issue, any dispute on throw-weight would be resolved by the Joint Compliance and Inspection Commission and not by a statement of fact by the owning party. Once resolved, both ordered their negotiators to wrap up the details on the treaty.<sup>42</sup>

The Treaty was signed during the Moscow Summit on 31 July 1991.<sup>43</sup> It took over nine years to complete and 15 rounds of meetings. Although START has not been ratified by either country it was an important beginning.

## CHAPTER III

### THE TREATY

*"Conscious that nuclear war would have devastating consequences for all humanity, that it cannot be won and must never be fought, convinced that the measures for the reduction and limitation of strategic offensive arms and the other obligations set forth in the Treaty will help to reduce the risk of outbreak of nuclear war and strengthen international peace and security...require the strengthening of strategic stability."*<sup>44</sup>

These words serve as a prophetic preamble to the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms, commonly referred to as START. START serves to reduce the risk of nuclear war and enhance deterrence by reducing US and Soviet (now the CIS) strategic offensive arms to equal aggregate levels. START also provides incentives for restructuring reduced strategic nuclear forces to increase stability.

As an overview to the treaty, START is the first strategic nuclear arms treaty to **reduce** the numbers of weapons by requiring reductions in strategic nuclear delivery vehicles, weapons, and throw-weight. This is to be carried out in three phases over seven years from the date that the treaty enters into force. At the end of each phase, the US and CIS will reach equal interim levels for agreed categories of strategic offensive arms. START will have a duration of 15 years, unless superseded earlier by subsequent agreements, and, if both sides agree, START may be extended for successive five year periods.<sup>45</sup> It defines central limits for warheads and delivery vehicles as well as a total throw-weight ceiling. These central limits include:

- 1,600 SNDVs.
- 6,000 accountable warheads.
- 4,900 ballistic missile warheads.
- 1,100 warheads on deployed mobile ICBMs.
- Throw-weight ceiling of 3,600 metric tons.
- 1,540 warheads on 154 heavy ICBMs for the Soviet side.<sup>46</sup> The Soviets also agreed in a side letter to eliminate 22 SS-18 launchers every year for seven years to achieve this level.<sup>47</sup>

In addition to the central limits listed above, the Treaty deals with downloading the number of RVs on existing ICBMs and SLBMs such as reducing the number of RVs on the US Minuteman (MM) III by 1 or 2 RVs. Constraints are also established on heavy ICBMs so their limits can never exceed 154 such silos. Heavy bombers are each counted as one SNDV. Each heavy bomber equipped only for nuclear weapons other than long-range nuclear ALCMs counts as one warhead under the 6,000 limit. The Treaty also makes provisions for removing from accountability under the 1,600 SNDV limit by conversions to a non-nuclear capability, however, these bombers have to be distinguishable from other heavy bombers.<sup>48</sup> In exchange for not including the Tupolev 22-M (Backfire) bomber in START, the Soviets entered into a binding document limiting their number and capability.<sup>49</sup> The Treaty also makes provisions for counting Long-Range Nuclear Air-Launched Cruise Missiles (LRNA), Mobile ICBMs, Sea Launched Cruise Missiles, and non-deployed missiles, as well as exemptions from Treaty limits.<sup>50</sup>



The following weapons and systems included in Treaty Limited Items (TLI), of existing types for the US and Soviet Union are:<sup>51</sup>

**US**

**USSR**

**Intercontinental Ballistic Missiles (ICBMs)**

<u>Weapon</u>	<u>Launcher</u>	<u>Warheads</u>	<u>Weapon</u>	<u>Launcher</u>	<u>Warheads</u>
Minuteman II	Silo	1	SS-11	Silo	1
Minuteman III	Silo	3	SS-13	Silo	1
Peacekeeper (PK)	Silo*	10	SS-17	Silo	4
			SS-18 heavy	Silo	10
			SS-19	Silo	6
			SS-24	Mobile/Silo*	10
			SS-25	Mobile	1

(\* Silo Based SS-24s and PKs are considered mobile ICBMs for most Treaty purposes.)  
Note - Warheads are per missile

**Submarine Launched Ballistic Missiles (SLBMs)**

<u>Weapon</u>	<u>Warheads</u>	<u>Weapon</u>	<u>Warheads</u>
Poseidon	10	SS-N-6	1
Trident I	8	SS-N-8	1
Trident II	8	SS-N-18	3
		SS-N-20	10
		SS-N-23	4

**Heavy Bomber Aircraft**

<u>Bomber</u>	<u>Armament</u>	<u>Bomber</u>	<u>Armament</u>
B-52G	LRNAs & non-nuclear arms	Bear H	LRNAs
B-52H	LRNAs	Blackjack	LRNAs
B-1B	Other nuclear arms	Bear A	Other nuc arms
		Bear B	Other nuc arms
		Bear G	Other nuc arms

**Long-Range Nuclear Air-Launched Cruise Missiles (LRNAs)**

<u>Weapon</u>	<u>Weapon</u>
AGM-86B	AS-15 Mod A
AGM-129	AS-15 Mod B

**NUMBER OF WEAPONS OF THE UNION OF SOVIET SOCIALIST REPUBLICS**

**ICBM TYPE**

<u>SS-11</u>	<u>SS-13</u>	<u>SS-17</u>	<u>SS-18</u>	<u>SS-19</u>	<u>SS-24*</u>	<u>SS-25</u>	<u>TOTAL</u>
326	40	47	308	300	89	288	1398

(Note \* Includes 56 Silo and 33 Rail-Mobile launchers)

<u>SLBM TYPE</u>						
<u>SS-N-6</u>	<u>SS-N-8</u>	<u>SS-N-17</u>	<u>SS-N-18</u>	<u>SS-N-20</u>	<u>SS-N-23</u>	<u>TOTAL</u>
192	280	12	224	120	112	940

<u>BOMBER TYPE</u>		
<u>Bear</u>	<u>Blackjack</u>	<u>TOTAL</u>
147	15	162

NUMBER OF WEAPONS OF THE UNITED STATES OF AMERICA

<u>ICBM TYPE</u>				
<u>MM-II</u>	<u>MM-III</u>	<u>PK-SILO</u>	<u>PK-MOBILE</u>	<u>TOTAL</u>
450	500	50	0	1000

<u>SLBM TYPE</u>			
<u>Poseidon</u>	<u>Trident I</u>	<u>Trident II</u>	<u>TOTAL</u>
192	384	96	672

<u>BOMBER TYPE</u>			
<u>B-52</u>	<u>B-1</u>	<u>B-2</u>	<u>TOTAL</u>
479	95	0	574

Regardless of the agreed upon limits of TLI, agreements are useless unless they are verifiable which boils down to the crux of START--verification. There has always been a mutual distrust and suspicion between the US and Soviet Union as to their intentions and objectives. The US has caught the Soviets in violation of previous agreements, thus a strong emphasis on effective verification and strict compliance are essential ingredients of the Treaty. START was designed with verification in mind, and verification measures were negotiated in parallel with other aspects. Thus, the basic structure of the Treaty is designed to facilitate verification by NTM. START contains detailed, interlocking and mutually reinforcing provisions, which supplement NTM to establish

an effective verification regime. This regime provides for data exchanges and notifications on strategic systems and facilities covered by the Treaty, a ban on the denial of data from telemetry, twelve types of on-site inspection and exhibitions, continuous monitoring at ICBM final assembly facilities, and cooperative measures. These measures are outlined as follows:<sup>52</sup>

- **National Technical Means (NTM)** - START provides for the use of, and noninterference with, national technical means of verification, e.g. satellites. There are explicit provisions prohibiting interference with NTM, or use of concealment measures that impede verification through NTM.
- **Telemetry** - Parties are prohibited from engaging in any practice that denies full access to telemetric information during missile flight tests, with certain limited exceptions. Moreover, the US and Soviets are required to exchange telemetry tapes, interpretative data and acceleration profiles for every test flight. Data denial, which involves telemetry and includes provisions concerning encapsulation and encryption of telemetric information, is discussed below.
- **Data Exchange and Notifications** - Prior to START being signed, the US and Soviets will exchange data on numbers, locations, and the technical characteristics of Treaty Limited Items and facilities, and will provide regular notifications and data updates thereafter. This includes site diagrams, numbers and locations of warheads, throw-weights, deployed ICBMs and SLBMs, bombers, repair facilities, etc.
- **Cooperative Measures** - Seven times a year, either party may request the other to display in the open road-mobile

launchers, rail-mobile launchers and heavy bombers at bases specified by the inspecting party. Additional cooperative measures may be requested following an operational dispersal.

- **Continuous Monitoring Activities** - START establishes continuous monitoring at the perimeter and portals of each side's mobile ICBM assembly facilities. The US has the right to establish a monitoring facility at Pavlograd, which is the final assembly facility for the SS-24, and at Votkinsk, the final assembly facility for the SS-25. The Soviets have the right to monitor the Thiokol Strategic Operations facility at Promontory, Utah, the final assembly facility for the accountable stage of the Peacekeeper. Such monitoring would also be permitted at any further facilities where mobile ICBM assembly takes place.

- **On-Site Inspections (OSI)** - There are twelve types of OSI and exhibitions. These are: baseline data inspections, data update inspections, new facility inspections, suspect site inspections, reentry vehicle inspections, post-exercise dispersal inspections, conversion or elimination inspections, close-out inspections, formerly declared facility inspections, technical characteristics exhibitions, distinguishability exhibitions and heavy bomber baseline exhibitions. These inspections allow inspectors of both sides to "get up close and personal" with the inspected site or TLI, and observe, examine, and collect information which may not be apparent or available through NTM.

- **Compliance** - Compliance concerns may be raised by either side in the Joint Compliance and Inspection Commission (JCIC) or any other appropriate forum.

- **Data Denial** - START includes an agreement to broadcast all telemetric information from test flights of ICBMs and SLBMs and to ban any practice (including encryption, encapsulation and jamming) that denies full access to telemetric information, with certain limited exceptions. Furthermore, a requirement to provide full telemetry tapes, acceleration profiles, and certain specified interpretive information after each test flight of an ICBM or SLBM is set forth. Finally, in a goodwill gesture, the US and Soviets agreed not engage in encryption or jamming beginning 120 days after START is signed.

- **Non-circumvention/Third Country Issues** - In separate agreements, and before Treaty signature, the US and Soviets on 29 July 1991, agreed to no transfers of strategic offensive arms (SOA) to third countries, except that there will be no interference with existing patterns of cooperation (the US modernizing of the United Kingdom's nuclear submarine missile fleet of Trident II weapons system). Furthermore, there will be no permanent basing of SOA outside national territory and no inspections outside national territory. Temporary stationing of heavy bombers overseas is permitted; however, certain notifications may apply. Also, port calls by SSBNs are permitted.

START provides strong verification measures to observe and monitor compliance. The next chapter will look at prior viola-

tions by the Soviets which further signify the importance of the START verification process.

## CHAPTER IV

### SOVIET NONCOMPLIANCE OF THE PAST

Every year the President of the United States is required to submit to Congress a report on Soviet Noncompliance with Arms Control Agreements. Previous submissions to Congress include those dated January 1984, February and December 1985, March and December 1987, and March 1988 (which only addressed Soviet actions with respect to the TTBT), December 1988, and February 1990. Because of the broad expanse of Soviet noncompliance over those years, only noncompliance issues since that last report will be addressed.

In his February 15, 1991, letter to the Speaker of the House of Representatives and the President of the Senate, President Bush acknowledged some progress in compliance with arms control agreements by the Soviets. However, he expressed concern with the Soviet's failure to comply with past treaties and looked at these noncompliances as possibly affecting our judgment in dealing with them on future treaties. The President identified Soviet noncompliance with existing arms control agreements, including the TTBT, the LTBT, the Biological and Toxin Weapons Convention (BWC), the Geneva Protocol on Chemical Weapons, and the treaty covering CFE. The President also issued "findings" on the INF Treaty and the ABM Treaty. Without exception, President Bush expects meticulous fulfillment of all arms control agreements and compliance with the terms of agreements and obligations of the arms control process to benefit US security.

### Noncompliance with the CFE Treaty

The CFE Treaty, which was signed on November 19, 1990, required an initial submission of information on the items limited by and subject to the terms of the Treaty on the date the treaty was signed. Corrections to the original data furnished by each signatory made within 90 days will be considered valid as of the date of signature. The Soviet Union transferred large quantities of equipment outside the zone to which CFE Treaty limits apply. All transfers that occurred prior to the date of signing are legal, however, the large quantities of equipment transferred subsequent to the signing, and the consequent reduction in the Soviet obligation to destroy the equipment to reach CFE Treaty limits is a violation and causes concern as to Soviet intentions.

### Noncompliance with the INF Treaty

The most serious issue related to implementation of the INF Treaty is the presence of SS-23 missiles and launchers in Bulgaria, Czechoslovakia, and East Germany.

In early 1990, the US became aware for the first time of the existence of SS-23 missiles in Eastern European countries. The Soviets stated they transferred the SS-23s to Bulgaria, Czechoslovakia, and East Germany, none of which were signatories to the Treaty, prior to entry into force of the INF Treaty. Furthermore, documentation presented to the United Nations disclosed the Soviets produced more SS-23s than they declared or those claimed by any Eastern European country. This causes several questions:

(1) were the SS-23s Soviet "possessed" at any time since November 1, 1987?



(2) were there other SS-23s beyond those the US now knows to exist?

(3) did Soviet failure to inform the US of their existence constitute fraud, misrepresentation, error, or what?

From March 1 to March 10, 1990, the Soviets refused to allow the US to use the newly operational Cargoscan non-damaging image producing equipment to examine three Soviet missile canisters exiting Votkinsk. The fact the Soviets prevented these procedures on three separate occasions is a violation of inspection rights by the Treaty.

To enhance verification through NTM the INF Treaty provides the US the right to request the implementation of cooperative measures at certain ground-launched ballistic missile deployment bases which are not former SS-20 bases. In these cooperative measures all missiles on launchers are removed completely from their fixed structures and displayed in the open "without using concealment measures." The Soviets appear to be violating these cooperative measure provisions of the Treaty.

In an example of another violation, the US became aware of TLI in the form of SS-4 launch stands and missile transporter vehicles (MTVs) being located at facilities not declared under the Treaty.

In yet another example, the US became aware of several SS-5 MTVs at facilities not declared in the INF Treaty. The SS-5 is a TLI and the Soviets clearly stated that no SS-5 support equipment existed. Again, a violation.

### Noncompliance with the ABM Treaty

A prime US concern with ABM Treaty violations is the dismantling of the Krasnoyarsk large phased-array radar (LPAR) [Note- The Krasnoyarsk LPAR is assessed to be designed for ballistic missile detection and tracking but the Soviets claim it is intended for space tracking and NTM. An LPAR designed for ballistic missile detection and tracking can serve not only as a radar for warning of strategic ballistic missile attack but also has an inherent potential of supporting ABM battle management. Therefore, LPARs are considered to be long-lead time elements of a territorial defense. The Krasnoyarsk radar is about 740 kilometers from the USSR's nearest border--that with Mongolia. Moreover, the Krasnoyarsk radar is not directed outward as specified by the ABM Treaty but, rather, looks toward the Soviet Union's northeast border--almost 4,600 kilometers away.] There are also several other concerns of violations:

(1) the development and testing of components required for a mobile ABM system;

(2) the concurrent operation of air defense components and ABM components;

(3) the development of modern air defense systems that may have some ABM capabilities; and,

(4) the totality of Soviet ABM and ABM-related activities in the context of possible preparations for a defense of national territory. [Note- The 1972 ABM Treaty and 1974 Protocol ban deployment of ABM systems except that each party is permitted to deploy one ABM system around the national capital area or, alter-

natively, at a single ICBM deployment area. The Treaty does not allow for a national territory defense.]

#### **Noncompliance with the Limited Test Ban Treaty**

The Soviets conducted a single underground nuclear test in 1990. Subsequent to this test on October 24, 1990, nuclear debris was detected outside the Soviet Union. The material from this test did not pose a health, safety or environmental risk, but the Soviets denied the test occurred, although it did comply with the TTBT yield limit of being 150 kiloton or smaller.

#### **Noncompliance with the Chemical, Biological and Toxin Weapons Convention**

The US has determined that the Soviet Union has maintained an active offensive program since the 1930's and continues to be in violation of the 1972 Biological and Toxin Weapons Convention. The US also judges that the Soviet capability may include advanced biological and toxin agents of which the US has little or no knowledge, let alone--a defense.

As a result of the 1986 BWC Review Conference, parties to the Convention agreed to exchange information on facilities used for high containment biological experimentation and facilities engaged in other activities relating to the BWC. Although the Soviets were forthcoming to some extent, the US believes illegal activities continue at facilities involved in Soviet offensive programs, and these facilities were not declared by the Soviets.

The US continues to believe the Soviets violated the 1925 Geneva Protocol and 1972 BWC by producing, transporting and using lethal and incapacitating chemical and biological agents for

hostile purposes in Laos, Cambodia, and Afghanistan. The Soviets still deny this assertion.

#### Noncompliance with the Ballistic Missile Launch Notification

##### Agreement

The Ballistic Missile Launch Notification Agreement (BML) was signed by the US and Soviets and entered into force May 31, 1988. It provides for a 24 hour advance notice, through the Nuclear Risk Reduction Centers, of data on ICBM or SLBM launches. The Soviets have not provided the proper required notification of their ICBM launches.

These are just a few examples of Soviet noncompliance and violation of treaty or agreement obligations. They depict not only multiple violations of the same treaty, but also a propensity to push to the edge or violate most treaties they enter. The US Senate continues to express concerns over these noncompliance issues as six senators have asked the White House to furnish Congress with the 1991 report on noncompliance, which is overdue. "We are concerned that the required yearly presidential report to Congress on non-compliance by the former Soviet Union with arms control treaties is now a full three months late."<sup>53</sup> The senators specifically expressed concerns of:

- The 20 December 1991 launch of an SS-19 ICBM from Kazakhstan that used coded test data transmissions.
- Recent admissions by military officers that a network of large radars encircling the former Soviet Union may be illegal under the 1972 ABM Treaty.
- The failure to dismantle completely the illegal ABM radar at Krasnoyarsk.

- The Bulgarian falsification and denial of information related to the SS-23 medium-range missiles of the former Soviet Union found in Bulgaria in possible violation of INF.
- Continuation of offensive biological weapons production and storage, which is banned by the 1972 BWC.
- Moscow's failure to notify the US in advance of missile launches.<sup>54</sup>

With the impending formal ratification hearings in the Senate on START, the President's yearly compliance report is needed to more completely elaborate on those issues raised by the senators.

It is because of their history of noncompliance and violation of treaties that the inspection, monitoring, and compliance protocols must be rigidly applied. We can ill afford to enter into a treaty that is not enforceable, verifiable, or where the players do not want to play by the rules of the game.

## CHAPTER V

### A PERIOD OF CHANGE

President George Bush, in a nationally televised address to the Nation on 27 September 1991, threw down the gauntlet to the Soviet Union, challenging them to follow his example by ordering a sweeping one-sided reduction in US nuclear strength and readiness in response to changes in Moscow that he called an "unparalleled opportunity" to make the world safer. Using START as a springboard, the President expressed his belief that it was the right time to achieve additional stabilizing changes. "We can now take steps to make the world a less dangerous place than ever before in the nuclear age."<sup>55</sup>

With these words, the President then described the steps he intended to implement unilaterally and without waiting for a Soviet response he:

- grounded all Strategic Air Command (SAC) bombers and took them off alert.
- took off alert all ICBMs covered by START.
- terminated development of the mobile Peacekeeper ICBM as well as the mobile portions of the small ICBM program.
- cancelled the follow-on air launched nuclear SRAM.
- and, ordered the streamlining of US command and control procedures to more effectively manage the US strategic nuclear forces by consolidating them under a new single command, US Strategic Command, and one commander.<sup>56</sup>

The President then called upon the Soviet leadership to meet his challenge and make similar cuts and suggested areas of cooper-

ation: First, the exploring of joint technical cooperation on the safe and environmentally responsible storage, transportation, dismantling and destruction of nuclear warheads. Second, discussing the existing arrangements for physical security and safety of nuclear weapons and how they might be enhanced. And third, reviewing nuclear command and control arrangements and how these might be improved to provide more protection against unauthorized or accidental use of nuclear weapons.

The President encouraged the Soviets to follow his lead and concluded his remarks with an air of upbeat optimism. "It has been said, 'Destiny is not a matter of chance, it is a matter of choice; it is not a thing to be waited for, it is a thing to be achieved.' The United States has always stood where duty required us to stand. Now let them say that we led where destiny required us to lead--to a more peaceful, hopeful future. We cannot give a more precious gift to the children of the world."<sup>57</sup>

President Bush's nuclear reduction initiatives brought resounding laudatory remarks and promised actions by leaders from around the world. French President Francois Mitterrand stated, "France will join in the destruction of nuclear forces once the efforts of our two main partners have reached a sufficient level where [French nuclear forces] are comparable. Make a further effort, gentle, and we will be delighted to join you around the table on that issue." British Prime Minister John Major stated this initiative was, " Bold, far-reaching, historic and imaginative."<sup>58</sup> German Chancellor Helmut Kohl, Japanese Prime Minister Toshiki Kaifu, South Korean President Roh Tae-woo, and numerous

others made similar remarks supporting the President's nuclear initiatives.

It took only eight days for Soviet President Gorbachev to respond with sweeping changes of his own. Gorbachev also called for negotiations to reduce the long-range, strategic missile and bomber arsenals of both nations by roughly half. Unconditional in some areas and challenging the US in others, President Gorbachev conveyed his willingness to enter a new era of arms control, in which the two nations agree to destroy an entire class of weapons without years of bargaining and negotiation. "Acting in this way--in some cases unilaterally, in other cases by responding to the moves of others, and in other cases through negotiations--we are decisively advancing the process of disarmament, bringing closer our goal of a nuclear-free world."<sup>59</sup>

Soviet President Gorbachev proposed the following unilateral cuts:

- Destroy all nuclear artillery ammunition, mines and nuclear warheads of tactical missiles.
- Remove all tactical nuclear weapons from surface ships and multi-purpose submarines. The weapons will be partly stockpiled and partly destroyed.
- Remove and partly destroy all nuclear warheads of anti-aircraft missiles.
- Take heavy strategic bombers off standby and store their nuclear weapons in depots.

Stop development of compact mobile ICBMs. Freeze mobile, rail-based ICBMs at present levels and keep them in their permanent sites.



- Remove 503 ICBMs from alert status including 134 MIRV'd missiles.
- Cut the Soviet armed forces by 700,000.
- Suspend nuclear tests in 1992.

In addition, President Gorbachev proposed to negotiate a further 50 percent cut in strategic weapons, create a joint US-Soviet early warning system against nuclear attack, and liquidate all tactical nuclear weapons in both navies in addition to both sides removing all nuclear weapons from forward military tactical aviation units.<sup>60</sup>

President Gorbachev also made additional far-reaching proposals pertaining to START. He said 1,000 additional Soviet weapons covered under START would be destroyed. This would leave the arsenal with 5,000 such weapons instead of 6,000 and still allow for further negotiated reductions. In addition, President Gorbachev, whose power sharply diminished since a failed right-wing coup by military hard-liners in August, appeared eager to reassert his authority in an area where he has long been self-confident. This added reduction, coupled with a position he proposed several years previous--the elimination of all nuclear weapons within this century, pushed his position ahead of that of President Bush and not merely that of being seen as simply following Bush's lead.<sup>61</sup>

Western leaders, as they lauded Bush's initiative, similarly applauded Gorbachev's nuclear cuts decision. President Mitterrand hailed, "the remarkable effort," and British Prime Minister Major said, "If it is what it seems to be, then there may be a unique opportunity to see a dramatic de-escalation in nuclear weap-

ons."<sup>62</sup> Other world leaders, such as President Bush thought it was good news, and German Chancellor Kohl "emphatically" welcomed the move. However, Japan was more cautious in her response believing a wait and see attitude was appropriate.<sup>63</sup>

But Gorbachev was not able to see his vision through. The internal upheavals in the Soviet Union brought forth his resignation at the end of December 1991, and with it, the demise of the Soviet Union. The leaders of 11 former Soviet republics meeting in Alma Ata, Kazakhstan declared the Soviet Union dead, replacing it with the new Commonwealth of Independent States (CIS), which spanned Europe and Asia. All the Republics agreed to the Commonwealth except Georgia and the Baltic states: Lithuania, Latvia, and Estonia which had previously declared their independence from the Soviet Union. Emerging from the summit at Alma Ata was Russian President Boris Yeltsin as the clear leader of the new Commonwealth, inheriting the Soviet seat on the United Nation's Security Council and the key role in controlling the former Soviet Union's nuclear arsenal.<sup>64</sup>

The demise of the Soviet Union caused concern in the world as to who really controlled the nuclear might of the new CIS. The leadership of the 11 CIS however, agreed to some extent among themselves on a single command for strategic nuclear forces. President Yeltsin said in essence that the 11 leaders of the independent republics agreed on preserving a unified control of the 30,000 strategic nuclear weapons located in Russia, Ukraine, Kazakhstan, and Belarus. However, the breakup raised questions of command and control. At the heart of the matter is Kazakhstan President Nursultan Nazarbayev's reluctance to leave Russia as the

sole nuclear power in the Commonwealth. The other two republics with strategic nuclear weapons on their soil, Ukraine and Belarus, want to be nuclear free. A protocol on nuclear weapons says until those in Belarus and Ukraine are destroyed, President Yeltsin will have to consult with the leaders of the other three republics before making a decision on launching. The agreement, which has to be ratified by republic parliaments, did not touch on the fate of Kazakhstan's weapons, which will be settled by separate agreement. The other republics do not have strategic weapons, but short-range nuclear weapons are believed to be distributed in Armenia, Azerbaijan, Georgia, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, and Uzbekistan.<sup>65</sup>

In a nationally televised speech in Moscow, President Yeltsin laid out a bold agenda of nuclear arms cuts to match those proposed reductions by President Bush. In his speech, he declared 600 land-and sea based nuclear missiles carrying 1,250 warheads were taken off alert, and his plans to halt production of long-range nuclear bombers and cruise missiles. In addition, President Yeltsin announced his proposal to deeply reduce strategic nuclear offensive weapons to a level of between 2,000 to 2,500 on each side.<sup>66</sup>

President Yeltsin seized the initiative in arms control by reducing strategic offensive nuclear weapons that are not only destabilizing by their very nature, but also draining much needed funding from his economic reforms. His steps were positive, but they need verification. Compliance and verification in accordance with the START protocols will allay mutual fears and strengthen mutual trust.

## CHAPTER VI

### VERIFICATION

An initial problem President Bush faces when the Senate takes up its "advice and consent" role in the ratification of START is with whom is the US entering into a treaty? Since the Soviet Union signed the Treaty with the US and it no longer exists, do the obligations incurred by the USSR carry over to the CIS? Or, does the US have to renegotiate the Treaty with each of the four nuclear powers within the CIS? Regardless of these legal questions, the primary question the Senate is going to ask during its ratification process will be whether or not compliance with the Treaty is verifiable. They want assurances that the verification regime the US develops is air tight and cheating detected immediately. However, nothing is absolute and verification cannot be done with an expectation of 100 percent certainty.

The lessons learned from the INF Treaty and its verification protocols have given the US enough experience to believe the protocols for START are adequate. The limits placed on the various nuclear systems will be verifiable through a variety of means such as on-site inspections, data exchanges, and NTM, to mention a few. Cheating to some extent is possible, but are the risks of getting caught worth the political liability that follows?

One of the initial steps taken for verification purposes was the exchange of technical data prior to the START being signed. This included locations, numbers, and technical descriptions of strategic nuclear weapon systems. This technical exchange will

continue throughout the duration of the Treaty with periodic updates. When the Treaty was signed inspectors from each side physically viewed, measured, and weighed a representative sample of each strategic weapon, such as: ALCMs, SLBMs, mobile ICBM launchers, and ICBMs, to obtain their technical characteristics.

Once this type of exhibition is complete and the Treaty goes into force, baseline inspections of the other sides identified locations will be conducted. These inspections include comparing the technical data previously furnished with the locations or sites identified as having strategic nuclear weapons. Included in the baseline inspection are storage and maintenance facilities, deployment locations, missile test facilities, bomber bases, and submarines carrying ballistic missiles.

When the baseline inspections are complete, routine inspections will begin and carry through for the duration of the Treaty. These inspections will be on short notice to the other side. The inspecting side will notify the party to be inspected that it wants to conduct an inspection. This notification is given a number of hours prior to arriving at one of the designated ports of entry (POE). Once the inspecting party arrives at the POE it will then inform the host nation of the location they desire to inspect. The host country then has a given number of hours to transport the inspectors to the inspection site. In order to prevent abuses of short notice inspections, the annual number of inspections will be limited to a pre-determined number.

As the Treaty enters into force and each side begins its reduction or conversion of nuclear delivery systems, inspectors will be present to monitor these activities. This includes the

conversion or destruction of ICBM silos, ballistic missile submarines, or heavy bombers, on-site inspection is permitted.

One key inspection measure is the suspect site inspection. These are typically short notice inspections of a site or facility the other side believes may be engaged in the covert repair, storage, production, or assembly of nuclear TLI. The suspect site inspections however, present somewhat of a problem. Each side has numerous secrets that may not be related to START TLI and the inspection could unnecessarily reveal highly classified and sensitive data. The problem arises when the inspecting party believes the facility has START related TLI. It is incumbent on the inspected party to allay the concern of the inspecting party that TLI are not in the facility. The methods by which this will be accomplished are being worked out. However, the inspected party does have a "right of refusal" in order to protect facilities and sites not containing TLI.

As the signatories reduce their weapons and shutdown their related facilities, close-out inspections of these facilities will be permitted to ensure they no longer produce TLI. These facilities will continue to be candidates for further inspections throughout the duration of the Treaty to ensure they are not covertly reestablished. Likewise, newly created facilities will be subject to continued inspection.

The inspection process is not solely limited to single party action. Cooperative measures are included in START to assist in the verification process. The inspecting party will on occasion require the inspected party to exhibit bombers or ICBMs at a certain location for a period of time to allow observatic by

satellite or NTM. When this occurs, the inspected party is not permitted to conceal or otherwise obscure the weapons or impede their verification.

Similarly, both sides have agreed to cooperate on verification of missile test flights. The encryption of test data is not permitted and neither is the jamming of the monitoring systems collecting the test data. Neither side is permitted to conduct any activity denying the inspecting party full access to the data. This is particularly important for the US during the monitoring of CIS ICBM and SLBM tests in order to verify the technical characteristics of the missiles and their associated RVs, and to ensure their compliance with START.

One of the important aspects aiding verification is that the number of weapons systems is limited by START and therefore, countable. Heavy bombers, ICBMs, and SLBMs are all defined to specific limits. It is therefore easy for the US to verify the fixed ICBMs by observing their silos and the contained missile. Destruction of the missiles and silos are easily verified by on-site inspections or through satellites. Similarly, if any silos are built these too can be observed through various inspection methods. As it takes a number of years to build missile silos and their supporting infrastructures, the chances they will not be detected is extremely minute.

As with silo launched ballistic missiles, submarines with a ballistic missile capability also would be observed. These submarines are hundreds of feet long and can not be built overnight. They too can be observed and their missile tubes counted. These NTM observations can also be followed by on-site inspec-

tions. The same procedure can be followed whenever a submarine is converted or dismantled, thus ensuring compliance with the Treaty.

The US will be able to monitor the CIS heavy bomber forces in the same way it does the ICBMs. NTM will monitor bomber bases, production and maintenance facilities, as well as their various test locations. The verification process on bombers is complicated somewhat because of some START provisions. Each side is permitted to convert a portion of its nuclear heavy bomber force to other non-nuclear missions. This could include a conversion to a conventional, tanker, reconnaissance or some other non-nuclear role. However, in converting these aircraft and because they are exempt from START limits, structural differences have to be distinguishable. In order to "distinguish" between the nuclear and non-nuclear capable aircraft, each side must exhibit the aircraft in the new configuration so that technical details and differences can be observed and measured. Once this is completed, future verification is possible through NTM and on-site inspections when needed.

As previously mentioned, NTM will play a prominent role in the verification process as well as alert the US to changes in the CIS military posture or capability. One way in which NTM plays a role is verification of RVs on missiles. Initially, a baseline is determined for each class of missile. This is accomplished by monitoring missile test flights and on-site inspections. During on-site inspections, the inspecting team visits the desired site and randomly chooses a missile to inspect. Then the inspected country removes the protective shroud from the missile, out of sight of the inspecting team, and covers the RVs with a form



fitting cover to protect the design. Once this is done, the RVs are physically counted to ensure they comply with Treaty limits. Although there is a potential for cheating on RV numbers, this cheating would not result in a militarily significant advantage for either side.

Missile test flights of the former Soviet Union were virtually monitored from launch to impact by NTM. In view of the START RV restrictions it would be almost impossible to conduct a test where the RVs exceeded limits and not detect it. National technical means will also play a role in determining the throw-weight of future missiles as well as the number of RVs it could carry.

The verification of bomber weapon systems is similar to the counting of ICBMs. Each bomber capable of carrying gravity bombs is considered to carry one weapon regardless of the number it can carry, to include short-range attack missiles. These penetrating bombers will be monitored by airframe and not by how many weapons they carry. Heavy bombers capable of carrying the nuclear ALCMs however, are a different story. Each side is required to make its nuclear ALCM capable bomber structurally different than the other heavy bombers and exhibit them for physical on-site inspection. Each ALCM capable bomber is limited to the number it can carry both internally and externally. The exhibition will verify the ALCM load capability of the aircraft. Verification is further enhanced as nuclear capable ALCM carriers under the Treaty are not based at the same location as conventional ALCM carriers. On-site inspections as well as NTM can verify this compliance issue.

Mobile ICBMs by their very nature pose the most serious challenge to verification. By design they are quickly deployed,

concealable, rapidly reloaded, and less vulnerable to attack. Monitoring the activities of the 10 RV SS-24 and single RV SS-25 however, does not pose an insurmountable problem. There are numerous ways to verify treaty compliance for these systems.

Advanced technology in the satellite imagery will enhance the capability to monitor mobile ICBMs. Recent developments in synthetic aperture radars permit observation through cloud cover and bad weather. Additional data exchanges and on-site inspections will aid verification measures.

A primary verification measure based on the INF Treaty is the PPCMs at the production sites for the SS-24 and SS-25. In essence, these PPCMs will monitor and inspect all canisters exiting the production facilities by weighing, measuring, and X-raying. Furthermore, START permits a designated number of minimal interior examinations of the canisters annually. These verification procedures provide the US with an accurate count of missiles produced. Once the missiles leave the production facility, NTM and on-site inspection will ensure further compliance.

Tagging is another way of ensuring compliance and identify all Treaty counted missiles. Although not yet implemented, tagging would entail placing a unique non-removable and non-reproducible credit card size tag on the mobile missile. This would ensure to on-site inspectors that the missile did not exceed Treaty limits and was not illegally or covertly produced.

Finally, mobile ICBM verification through cooperative efforts is possible. Mutual agreements on where mobile missiles will deploy, operate, and garrison have been worked out. Furthermore, START permits the US to request six times a year that garages

storing mobile missiles be opened, launchers be displayed outside their garages, or moved halfway out of the garages. These measures would permit NTM to verify the number of mobile missiles and their locations. Again, the use of short-notice on-site inspections will enhance verification measures and deter cheating.

## CHAPTER VII

### CONCLUSION

The Strategic Arms Reduction Treaty is verifiable and serves as a model for treaties which follow. The Treaty's verification protocol is complete and provides for the extremes in inspection--very intrusive to extremely remote. The combinations of inspection methods ranging from the use of NTM, on-site inspections, to cooperative measures and data exchanges, provides a high degree of certainty that neither side will gain a militarily significant advantage which could hold the other at risk. Cheating to some extent is possible, but is it worth the political risk? The world is watching and will judge the signatories by their actions.

Verification however, remains key. Counting fixed silos and the missiles they contain is far easier than accounting for all the mobile ones. But, the verification procedures developed in START will meet the demand these systems impose. Perimeter Portal Continuous Monitor Systems should allay fears that missiles are being produced and smuggled out of production facilities to clandestine sites. The large scale covert production of weapons, which could be militarily significant, and the development of their supporting infrastructures will not go unnoticed. On-site inspections of suspect sites will detect these illegal production activities. Also, any detection of a recurring pattern of violations would certainly alert the US. Could the offending nation afford the political heat?

START represents over 10 years of hard negotiation and compromise. It is based on an agreed fact that "nuclear war would

have devastating consequences for all humanity, that it cannot be won and must never be fought."<sup>67</sup> It is a treaty based on mutual trust and the verification provisions it contains. START is also a treaty based on the economic reality that neither country can afford the staggering costs associated with these systems nor further neglect its growing social needs. START is the conclusion of one stage of arms control. It reduces the strategic nuclear arms of two super powers, thereby lessening the perceived threat to each. It also serves as the springboard for follow-on treaties which could further reduce strategic force levels and nuclear war risks--START II.

Beyond any doubt, START reflects US goals and objectives in the negotiations: an approximately 50 percent reduction in CIS ballistic missile warheads, ballistic missile throwweight, and heavy missile warheads; preferential treatment for air-launched cruise missiles and short-range attack missiles; and no limits on long-range, conventionally armed cruise missiles. In addition, START protects US options to:

- modernize and restructure its strategic offensive forces,
- download ICBMs or redeploy them in mobile basing modes which would make hard-target attacks more costly to the adversary,
- download or redesign existing SLBMs or missile submarine force, and
- increase alert rates or disperse bombers to additional bases.

START is also a good deal for the CIS. START formalizes the equal nuclear superpower status of the CIS and codifies the US-CIS

strategic relationship. START will impose cuts on US strategic nuclear forces, not as substantial as those to be taken by the CIS, but certainly more balanced, from the CIS point of view, than those which resulted from CFE. START will make the US strategic offensive arsenal more predictable, and given the scarcity of resources and the increasing technological gap separating the CIS from the US, this predictability will be welcomed by CIS military leaders. START also helps reinforce the CIS case for continued US adherence to the ABM Treaty, one of Moscow's priority concerns in the wake of continued US obsession with SDI.

With the exception of the limit on new types of heavy missiles, START does not interfere with CIS modernization programs. Both road- and rail-mobile missile deployments may proceed as planned, and new, less highly MIRVed versions of existing missiles are permitted. Finally, the CIS political and military leadership for some time has understood that the primary function of nuclear weapons is not to fight wars but to deter the use of other nuclear weapons. START will make it easier for the CIS leadership to scale back investment in strategic nuclear weapons and to devote more resources to the economic infrastructure that is required to develop high-technology conventional systems.

START will certainly not solve all the strategic problems facing the US, and it does not reduce strategic offensive weapons nearly as much as even present strategic doctrine and targeting policy would permit. It does not eliminate the theoretical vulnerability of fixed ICBM silos. It will not guarantee that the CIS will not attempt to cheat. It does not eliminate the possibility of a rapid expansion of strategic forces if the treaty

regime breaks down. And it does not stop the modernization of strategic offensive weapons. All these are important, unresolved issues which need to be addressed head-on and promptly in the follow-on START negotiations to which each side is committed.

But START does take a major step toward reducing the risk of nuclear war and toward making the superpower relationship more stable. Both sides are certainly better off in a constrained nuclear environment within which they can plan future reductions than in an unconstrained one with ever-growing arsenals. A structured, predictable strategic relationship is certainly preferable to an unstructured, unpredictable and costly one.

START will also make it easier for the US to make rational decisions about its future strategic force structure and to finance strategic force modernization. And START will ease the task of monitoring CIS military activities, with on-site, on-demand inspection and with access to missile flight test information. In short, US security will be significantly better served in a world with a START Treaty than in one without it.

Regardless of the internal turmoil of the CIS, START is important to offensive strategic nuclear arms reduction. Russia is the legitimate successor to the Soviet Union for START and the US has to work with them and the other three nuclear republics to solidify and implement START. The US and CIS can ill afford to let this opportunity pass.

1. Joseph P. Harahan, "Historical Perspective on Arms Control Treaties and Agreements," US State Department Dispatch, (US Arms Control and Disarmament Agency, December 1990), p. 1.

2. Ibid., p. 2.

3. Ibid., pp. 2-3.

4. Ibid., p. 3.

5. Ibid., p. 3.

6. Ibid., pp. 3-4.

7. Ibid., pp. 2-3.

8. Ibid., p. 3.

9. The Strategic Arms Reduction Treaty US-Soviet Summit, Moscow July 30-31, 1991, (Washington D.C. US Arms Control and Disarmament Agency, 1991), pp. 1-17.

10. Ibid., p. 1. The sublimits are to ensure substantial cuts in the most destabilizing missile systems--ballistic missiles, especially large ICBMs with multiple independently targetable reentry vehicles (MIRVs).

11. Ibid., p. 2.

12. Ibid., p. 2.

13. Ibid., p. 2.

14. Ibid., p. 2.

15. Ibid., pp. 2-3.

16. Ibid., p. 3.

17. Ibid., p. 3.

18. Ibid., p. 3.

19. Inaugural Address of President Ronald Reagan, January 21, 1985, Washington D.C.

20. The Strategic Arms Reductions Treaty, US-Soviet Summit, Moscow, July 30-31, 1991, (Washington D.C. US Arms Control and Disarmament Agency, 1991) pp. 3-4.

21. Ibid., pp. 3-4.

22. Ibid., pp. 3-4.

23. Ibid., p. 4.



24.Ibid., pp. 4-5.

25.Ibid., p. 5.

26.Ibid., pp. 5-6.

27.Ibid., p. 5.

28.Matthew Bunn, "SS-18 Modernization: The Satan and START," Arms Control Today, (Washington D.C. May 1988), pp. 13-17.

29.START, pp. 6-7.

30.Ibid., p. 7.

31.Ibid., pp. 7-8.

32.Ibid., pp. 7-8. (Note - One of the reasons the Soviets wanted to limit the number of launchers vice the missiles themselves is that some Soviet launchers are "cold launch" facilities. That is, the missile is expelled out of the silo by gas generators, ignites above ground, and speeds toward its target. This type launch causes minimal damage to the silo and permits reloading of the silo with another missile ready for launch. These "cold launch" reloadings can be accomplished in rather short order and do not render the silo "damaged" or "inoperative." In a "hot launch" the missile ignites in the silo and destroys the interior of the silo during launch thus rendering the silo incapable of being reloaded with another missile. The majority of US ICBMs are "hot launched." Thus, if the Soviets proposal to limit launchers and not missiles, they would have a sizeable advantage.)

33.Ibid., pp. 8-10.

34.Ibid., p. 10.

35.Ibid., p. 10.

36.Ibid., pp. 10-11.

37.Ibid., pp. 10-11.

38.James P. Rubin, "News and Negotiations: Baker, Shevardnadze Generate Arms Control Progress; From Wyoming Rockies, A Summit is Visible," Arms Control Today, October 1989, pp. 26-27.

39.START, US-Soviet Summit, Moscow, July 30-31, 1991. p. 14.

40.Ibid., p. 15.

41.Ibid., pp 15-16.

42.Ibid., pp. 16-17.

43.The Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms, Signed in Moscow on July 31, 1991, (Washington D.C. United States Arms Control and Disarmament Agency, 1991).

44.Ibid., p. 1

45.Ibid., pp. 1-16. As relates to START and for the purpose of this paper, the term Soviet will be used as the Soviet Union had not fallen until after the Treaty had been signed in Moscow. When and where appropriate reference will be specifically made to the CIS.

46.Ibid., p. 1.

47.Youri K. Nazarkin, Soviet Ambassador, Head of Delegation of the USSR to the Negotiations on Nuclear and Space Arms, in letter dated July 30, 1991, to US Ambassador Linton F. Brooks, Head of US Delegation to the Negotiations on Nuclear and Space Arms.

48.Start,, pp. 1-16, 76-79.

49.Declaration by the Union of Soviet Socialist Republic Concerning the Tu-22M Medium Bomber, July 31, 1991. (The Soviets declare the Backfire is a medium bomber and not a strategic weapon. The Soviets will not give the Backfire the capability of operating at intercontinental distances in any manner, including in-flight refueling. The also will limit the number of aircraft to 300 air force and 200 naval.)

50.START., pp. 8-16, 18-23.

51.Ibid., pp. 120-228.

52.Ibid., pp. 13, 22, 30-101, 242-249

53.Bill Gertz, "Senators seek report on C.I.S. compliance," The Washington Times, (Washington D.C. 7 March 1992) p. A-4. The senators expressing this concern are: Larry Pressler R-SD, Robert Smith R-NH, Steven Symms and Larry Craig R-ID, Connie Mack R-FL, and Malcolm Wallop, R-WY. Russia is the sole legal successor to the Soviet Union for past treaty obligations. An exception is the unratified START. The Senate has demanded that the four nuclear-armed members of the Commonwealth of Independent States--Russia, Ukraine, Belarus, and Kazakhstan--sign START before it is ratified.

54.Gertz., p. A4.

55.President George Bush, Presidential Address to the Nation from the Oval Office, the White House, Washington D.C. (viewed on ABC television 27 Sep 1991).

56.Ibid.

57.Ibid.

58. Combined reports from world dispatches in response to President Bush's plan for sweeping cuts in U.S. nuclear weapons. (Washington Times, 29 September 1991) p. A-6.
59. Fred Hiatt, Washington Post Foreign Service reporting on Soviet President Mikhail Gorbachev's Moscow televised speech 5 Oct 1991. (Reported by The Washington Post, 6 Oct 1991), p. A1 and A33.
60. Ibid., p. A1 and A33.
61. Sergei Shargorodsky, The Associated Press, Reporting of Soviet President Gorbachev's speech in Moscow 5 Oct 1991, (The Sunday Times, Washington D.C. 6 Oct 1991), p. A1 and A8.
62. Jessica Baldwin, The Associated Press, "Western leaders laud Soviet nuclear cuts decision," The Washington Times, (Washington D.C. 7 Oct 1991), p. A7.
63. Ibid., p. A7.
64. James Rupert, "Ex-Soviet Republics Sign Charter-Yeltsin to Control Most Nuclear Arms": The Washington Post, (Washington D.C. December 22, 1991), pp. A1 and A41.
65. Gerald Nadler, "C.I.S. leaders agree to realign military," The Washington Times, (Washington D.C. December 31, 1991), pp. A1 and A8.
66. Gerald Nadler, "Yeltsin says he'll slash C.I.S. nuclear arsenal," The Washington Times, (Washington D.C. 30 Jan 1992), pp. A1 and A7.
67. The Strategic Arms Reduction Treaty, p. 1

APPENDIX  
ABBREVIATIONS

ABM - Anti-Ballistic Missile Treaty

ALCM - Air-Launched Cruise Missile

BML - Ballistic Missile Launch Notification Agreement

BWC - Biological and Toxin Weapons Convention

CFE - Conventional Armed Forces in Europe Treaty

CIS - Commonwealth of Independent States

ICBM - Intercontinental Ballistic Missile

INF - Intermediate-Range Nuclear Missile Force Treaty

JCIC - Joint Compliance Inspection Commission

LPAR - Large Phased-Array Radar

LRNA - Long-Range Nuclear Air-Launched Cruise Missile

LTBT - Limited Test Ban Treaty

MIRV - Multiple Independently-Targetable Reentry Vehicle

MM - Minuteman Missile

MOD - Modification

MOU - Memorandum of Understanding

MTV - Missile Transporter Vehicle

NATO - North Atlantic Treaty Organization

NET - Nuclear Nonproliferation Treaty

NST - Nuclear and Space Talks

NTM - National Technical Means

OSI - On-Site Inspection

PK - Peacekeeper Missile

PNET - Peaceful Nuclear Explosions Treaty  
 POE - Port of Entry  
 PPCM - Perimeter-Portal Continuous Monitoring  
 RV - Reentry Vehicle  
 SAC - Strategic Air Command  
 SALT - Strategic Arms Limitation Treaty  
 SDI - Strategic Defense Initiative  
 SLBM - Submarine Launched Ballistic Missile  
 SLCM - Sea-Launched Cruise Missile  
 SNDS - Strategic Nuclear Delivery System  
 SNDV - Strategic Nuclear Delivery Vehicle  
 SOA - Strategic Offensive Arms  
 SRAM - Short-Range Attack Missile  
 START - Strategic Arms Reduction Treaty (also known as the Treaty  
 Between the United States of American and The Union of  
 Soviet Socialist Republics on the Reduction and  
 Limitation of Strategic Offensive Arms)  
 TLI - Treaty Limited Items  
 TTBT - Threshold Test Ban Treaty  
 UN - United Nations  
 US - United States  
 USSR - Union of Soviet Socialist Republics